

Work Order ID 102893

102893

Page 1

June-12-13 9:16:15 AM

Item ID: 646.3316

Accept

N900040100

Setup

Start

NS1

Revision ID:

Stop

NS2

Item Name: Blade

Start Date: 6/11/13

Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/11/13

Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: M.L.J.

Date: B-06-14

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr								
----------	--------------	--	--	--	--	--	--	--	--

646.3300	N/C	0.00							
----------	-----	------	--	--	--	--	--	--	--

100

100

BAND SAW

Bandsaw

Jespa Bandsaw

Memo

Cut Blank at 6.000"

0.00

MLJ B-06/22

6 ✓

110

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

HAAS CNC vertical machine #1

Memo

I-Machine per folio FB147

DWG REV: N/C

FOLIO REV: A-A

0.00

MLJ B-06/28

6 ✓

2- deburr and break all sharp edges except otherwise noted

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

<p>Work Order: _____</p> <p>Part No. _____</p> <p>NCR No. _____</p>	DISPOSITION <input type="checkbox"/> Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved	AGAINST DEPARTMENT/PROCESS <input type="checkbox"/> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other
---	--	---

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY									
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other					

Work Order ID 102893

102893

Page 2

June-12-13 9:16:15 AM

Item ID: 646.3316

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NS1

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Stop

NS2

Item Name: Blade

Start Date: 6/11/13 Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/11/13 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

OK/MH 13/06/28 6 φ

120

QC

Memo

0.00

Quality Control

130

QC8- Inspect parts - second check

0.00

DA 13/07/02

DAS
08
9-08

130

QC

Memo

0.00

Quality Control

140

Outsource process - Heat Treat

0.00

140

Outsource

Outsource process - Heat Treat

Memo

0.00

HEAT TREAT AS PER DWG, SEE NOTE #3

ISSUE P/O: 20425

CL 13/07/04

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

<p>Work Order: _____</p> <p>Part No. _____</p> <p>NCR No. _____</p>	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>
---	--	---

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY									
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled	<input type="checkbox"/> Other				

*Work Order ID 102893

June-12-13 9:16:15 AM

102893

Page 3

Item ID: 646.3316

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Blade

Stop

NS2

Start Date: 6/11/13 Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/11/13 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.00

6/3/128(6)

155

QC5- Inspect part completeness to step on W/O

0.00

DA
27
66

13705

6

155

QC

Quality Control

160

Spray Painting per QSI005 4.2

0.00

160

SprayPaint

Spray Painting

Memo

0.00

PRIME AS PER DWG, SEE NOTE #4

PRIMER BATCH: 126082

6 0 0 A
B-8-14

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

<p>Work Order: _____</p> <p>Part No. _____</p> <p>NCR No. _____</p>	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>
---	--	--	--	--	--

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--	--

Work Order ID 102893

June-12-13 9:16:15 AM

102893

Page 4

Item ID: 646.3316

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Blade

Stop

NS2

Start Date: 6/11/13

Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/11/13

Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

170

QC14- Inspect Spray Paint

0.00

6

(DAS
05
9-83) 13-08-16

170

QC

Quality Control

180

Identify as per dwg & Stock Location: MF

0.00

6x

11.10.13-08-16

180

Packaging

Packaging

Memo

0.00

IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV

190

QC21- Final Inspection - Work Order Release

0.00

13/8/2014

190

QC

Quality Control

Memo

0.00

MJ 13-08-16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____

Date: _____

Work Order update only

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITIONRework Scrap Use-as-is Suspected Unapproved **AGAINST DEPARTMENT/PROCESS**Skid-tube Machining Thermoforming Large Fab Crosstube Small Fab Finishing Composite Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier Engineering Quality Other

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design										
Doc/Data										
Equip/Tooling										
Handling/Pre										
Material										
Operator										
Offset/Setup										
Process										
Supplier										
Training										
Transport										
Unapproved										

FAULT CATEGORY

Landing Gear		General									
	Bending		Bend		Folio/Program		Outside Dimensions		Pressure/Forced		
	Centre Not Concentric		BOM/Route		Grain		Over/Under tolerance		Set-up		
	Cracks		Broken/Damage/Defect		Hardware		Part Incorrect		Temperature/Cure		
	Crimp/Kink/Ripple/Wave		Burrs		Inspection Incomplete/Unqualified		Part Lost/Missing		Weld		
	Cuffs		Contamination		Instructions Incomplete/Unclear		Part Moved		Wrong Stock Pulled		
	Crushing		Countersink		Misaligned/off center		Positioned Wrong				
	Heat Treat		Cut Too Short		Mislabeled		Power Loss/Surge				
	Inspection Strip in Tube		Drawing		Misread						
	Marks/Chatter		Drill Holes		Off-set						
	Turning Sequence		Finish		Out of Calibration						
	Wave/Twist in Tube		Fit/Function		Out of Sequence						

Picklist Print

June-12-13 9:16:15 AM

Page 1

Work Order ID: 102893

Start Date: 6/11/13

Required Date: 6/11/13

Parent Item: 646.3316

Start Qty: 2.00

Required Qty: 2.00

Parent Item Name: Blade

Comments: IPP REV:A NEW ISSUE 12/11/07 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased	No			100	f	19.2556	0.5	1.0526316			

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

Location	Loc Qty	Loc Code
MAT009	19.2556001	
123250	0.0000001	
— 125350	19.2556	

3-15 MH 13/06/22

DQA:

Date:



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date:

Work Order update only

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. _____	Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. _____	Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>
	Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
	Suspected Unapproved <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear	General			
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Folio/Program	<input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Pressure/Forced
<input type="checkbox"/> Centre Not Concentric	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Grain	<input type="checkbox"/> Over/Under tolerance	<input type="checkbox"/> Set-up
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damage/Defect	<input type="checkbox"/> Hardware	<input type="checkbox"/> Part Incorrect	<input type="checkbox"/> Temperature/Cure
<input type="checkbox"/> Crimp/Kink/Ripple/Wave	<input type="checkbox"/> Burrs	<input type="checkbox"/> Inspection Incomplete/Unqualified	<input type="checkbox"/> Part Lost/Missing	<input type="checkbox"/> Weld
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Part Moved	<input type="checkbox"/> Wrong Stock Pulled
<input type="checkbox"/> Crushing	<input type="checkbox"/> Countersink	<input type="checkbox"/> Misaligned/off center	<input type="checkbox"/> Positioned Wrong	
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Other
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Drawing	<input type="checkbox"/> Misread		
<input type="checkbox"/> Marks/Chatter	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Off-set		
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Calibration		
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Fit/Function	<input type="checkbox"/> Out of Sequence		

APICAL
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 03724

SHEET 1 OF 1

DWG NO. 646.3300

REV: N/C PREPARED BY B. PETERS

DATE: 12/05/12

EFFECT ON DWG
 INC. UNINC.

DWG TITLE: UPPER CUTTER ASSY

APPROVED BY:

ENGR *[Signature]*

MFG

[Signature]

QC

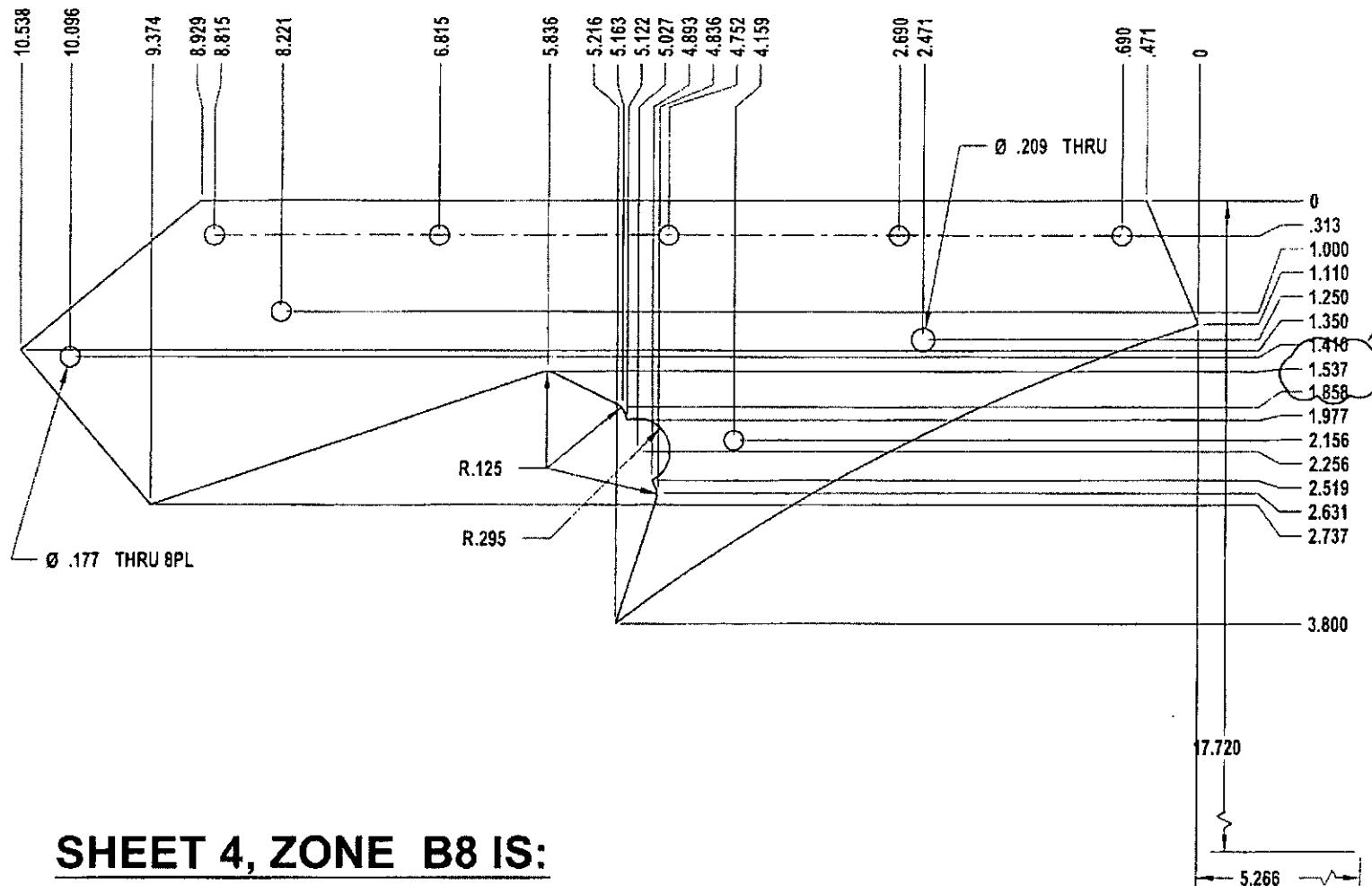
[Signature]
EFF' NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON:

REVISED ORDINATE DIMENSION.

ECR:
D-12-025



10Z893 MLS
13-06-14

SHEET 4, ZONE B8 IS:

DOCUMENTS EFFECTED:

RFMS MDL INSTALL INSTRUC ICA BOM

CHANGE CATEGORY
 MAJOR MINOR

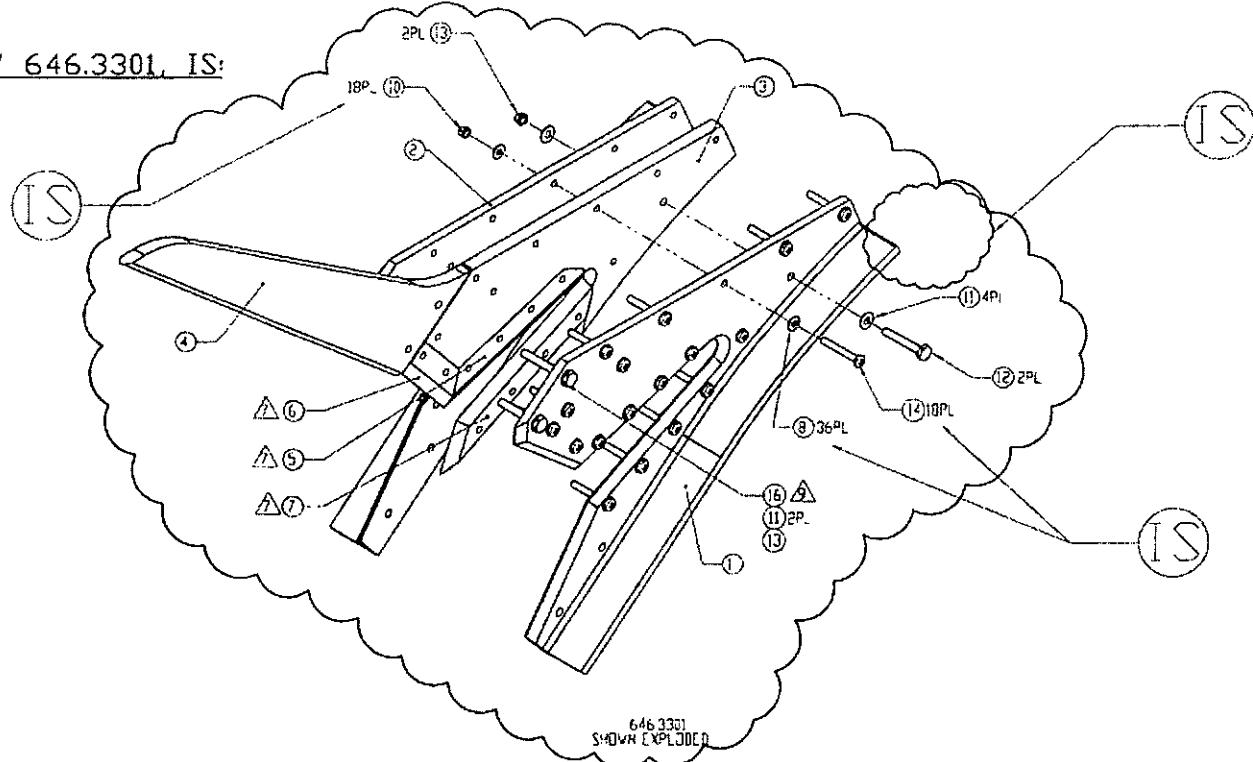
DER REVIEW REQUIRED
 YES NO



**APICAL
INDUSTRIES, INC.**

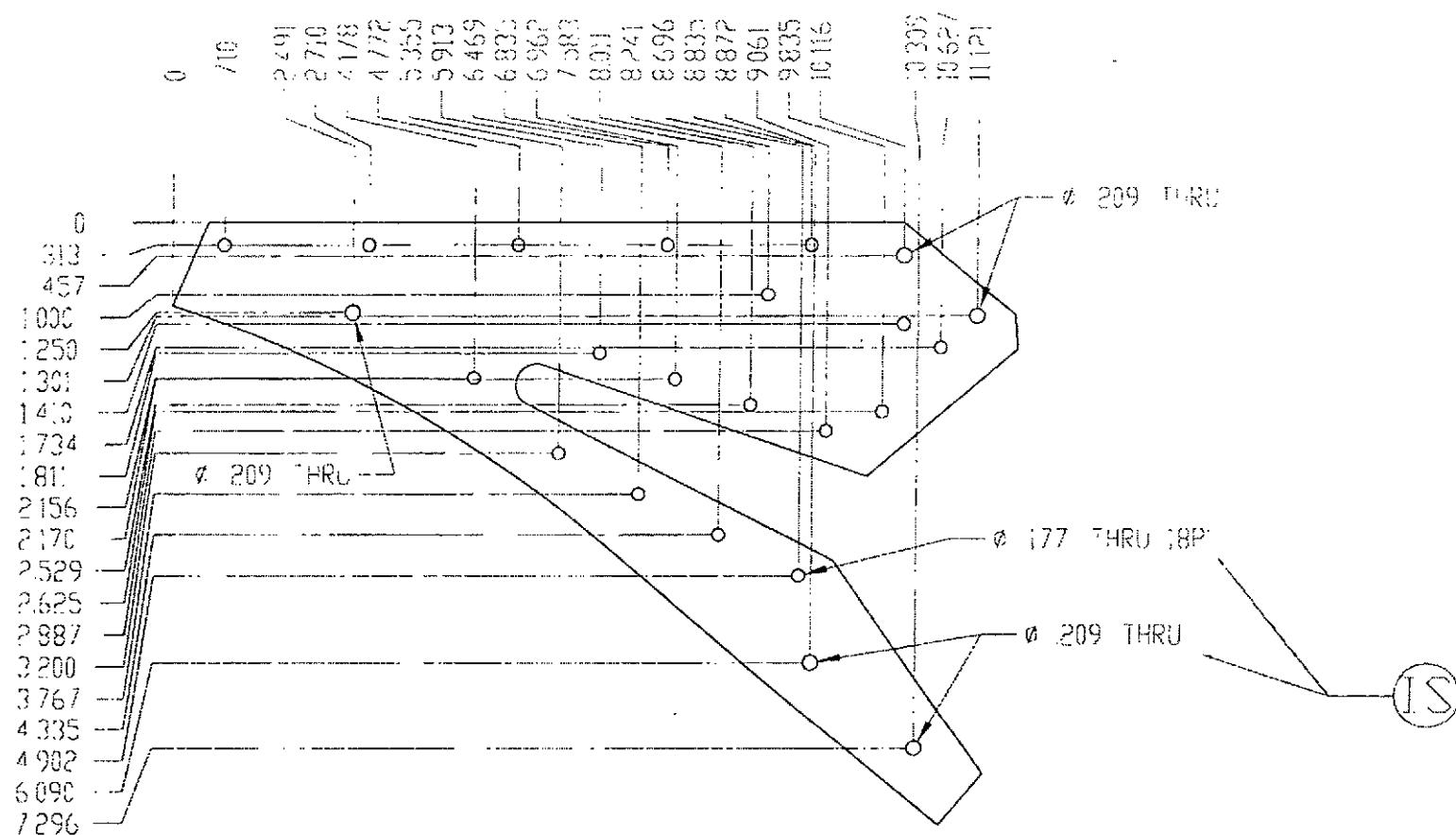
ENGINEERING CHANGE NOTICE NO.		02196	SHEET 1 OF 2	
DWG NO. 646.3300		REV: N/C	PREPARED BY S. HUFF	DATE: 01/05/09
			<input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	EFFECT ON DWG
DWG TITLE: UPPER CUTTER ASSY				
APPROVED BY:	ENGR: 	MFG: 	QC: 	EFF: NEXT ORDER
REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS				

SHEET 1, VIEW 646.3301, IS:



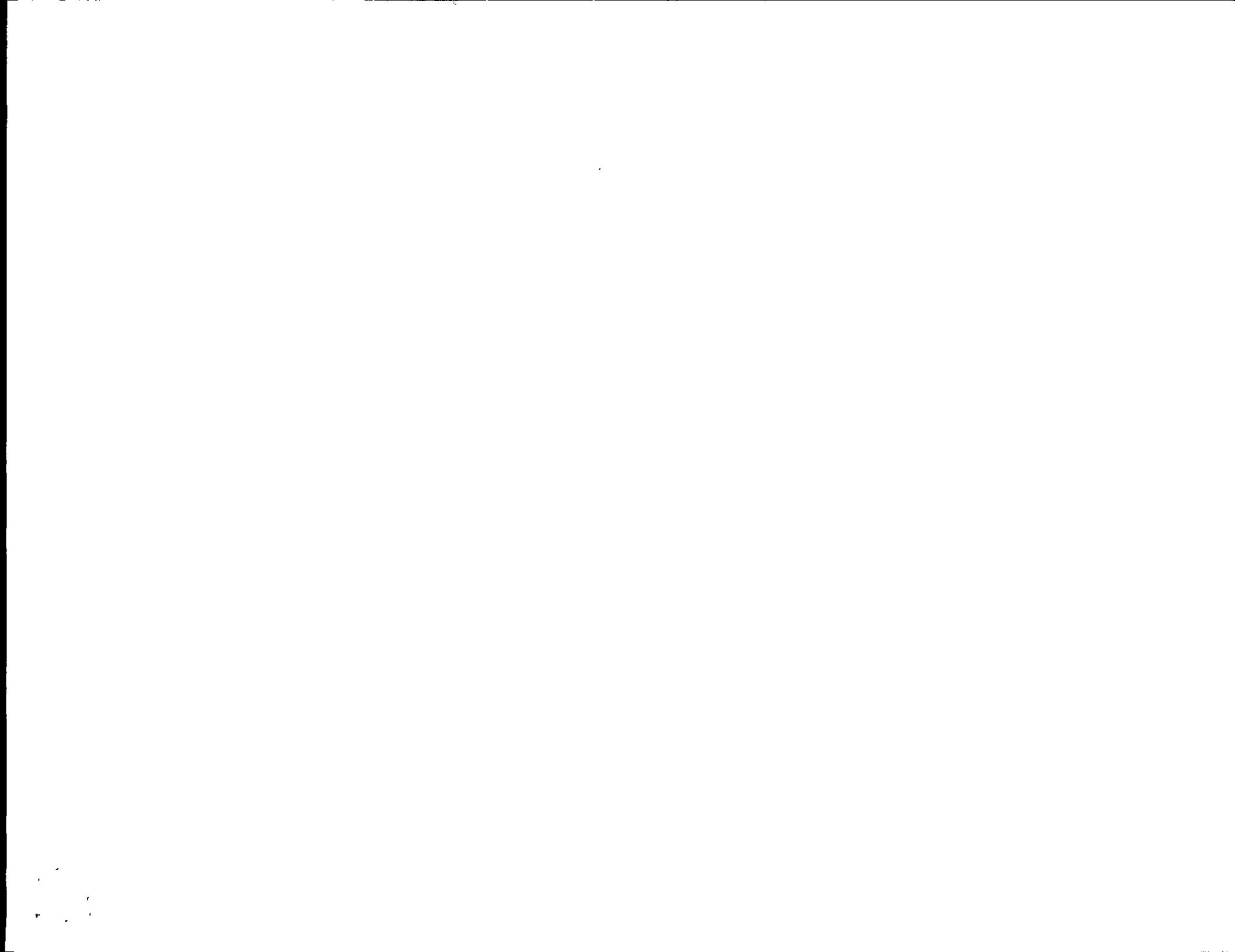
14	R	601.2765		18	SCREW	MS27039-0819					
10	R	601.1541		18	LOCKNUT	MS21042L08					
9	D	601.2766		3	RIVET	MS20470AD5-18					
8	R	601.2764		36	WASHER	NAS1149FN832P					
			.3301								
F/N	TC	PART NUMBER	QTY	DESCRIPTION		MATERIAL/SPECIFICATION					
DOCUMENTS EFFECTED:				<input type="checkbox"/> MDL	<input checked="" type="checkbox"/> INSTALL INSTRUC	<input checked="" type="checkbox"/> ICA	<input type="checkbox"/> FMS	<input checked="" type="checkbox"/> BOM	CHANGE CATEGORY	DER REVIEW REQUIRED	
								<input type="checkbox"/> MAJOR	<input checked="" type="checkbox"/> MINOR	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO



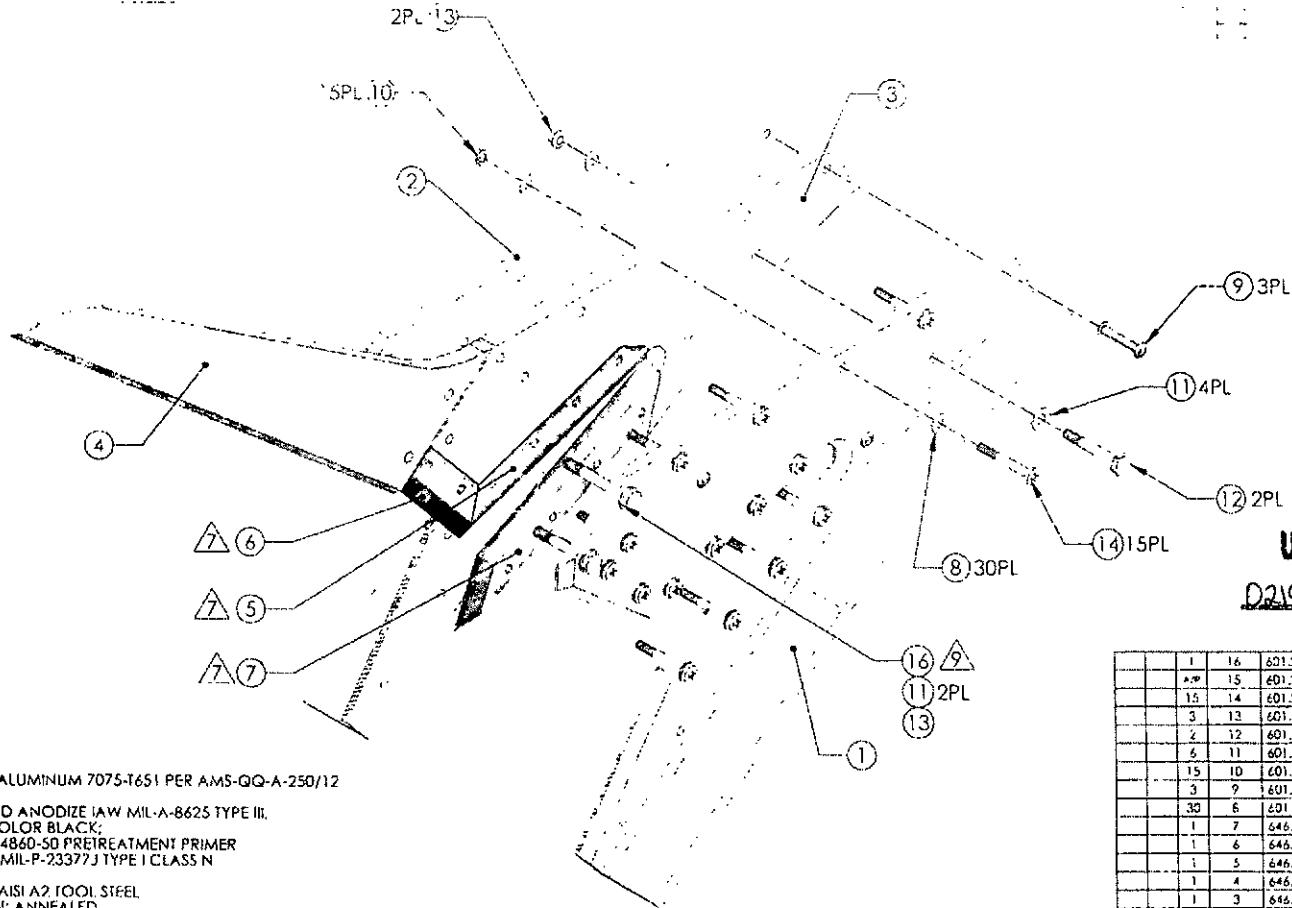
SHEET 3, SECTION VIEW A-A, IS:

SECTION A-A [P6]

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
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102893



NOTES:

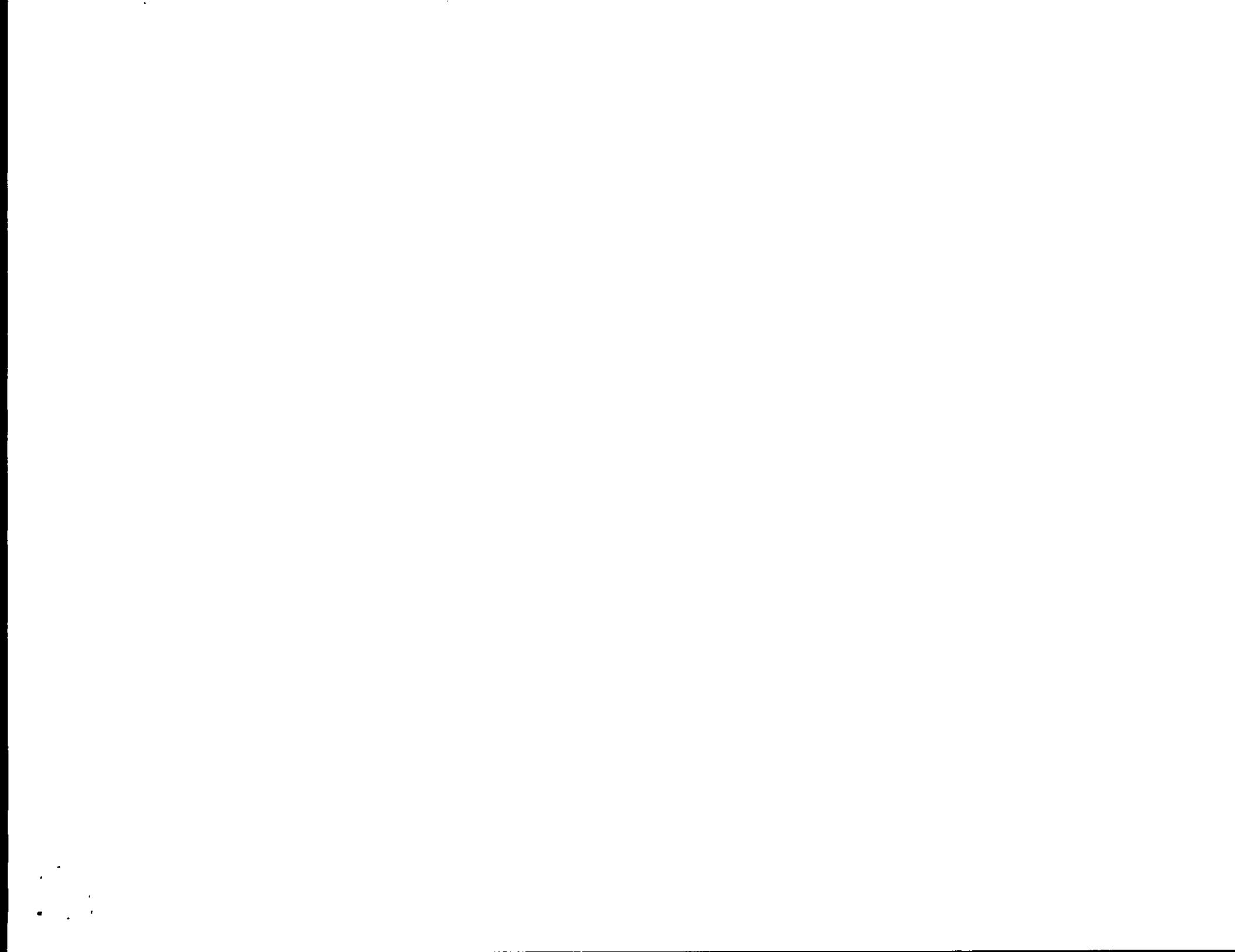
- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-S0 PRETREATMENT PRIMER PRIME IAW MIL-P-2337J TYPE I CLASS N
- 3 MATERIAL: AISI A2 TOOL STEEL CONDITION: ANNEALED POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-2337J TYPE I CLASS N
- 5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6. IDENTIFY IAW MPP-120
- 7. APPLY F/N 15 AS REQUIRED TO ALL FAYING SURFACES OF F/N 5, 6 & 7 UPON ASSEMBLY
- 8. CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9. INSTALL FASTENER FINGER-TIGHT

646.3301
SHOWN EXPLODED

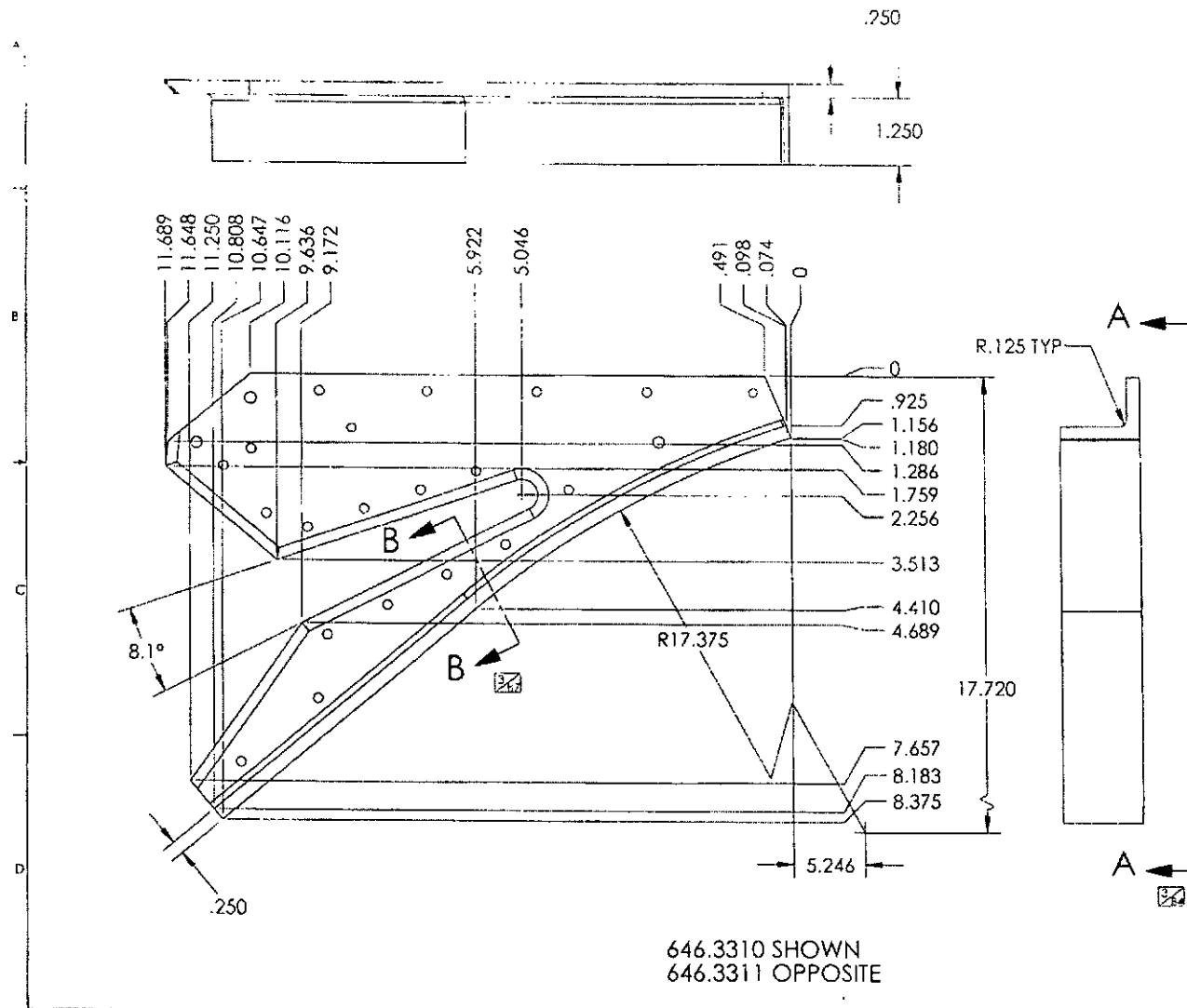
UNINCORPORATED ECN(s)

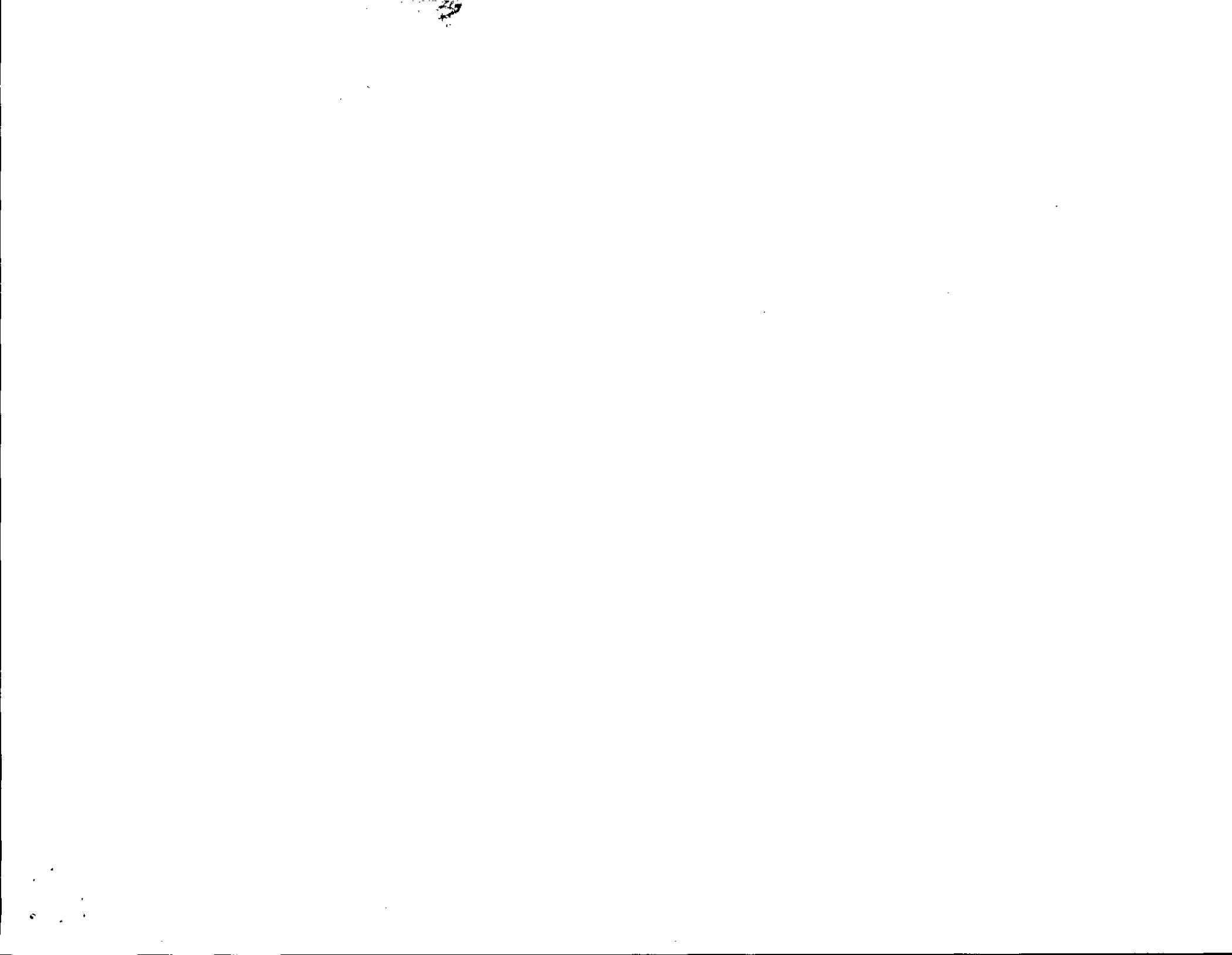
D2194, D3724

	1	16	601.2834	BOLT	AM3 MA
A/P	15	601.2043	RIV. LOCHIE 5PB		
	15	601.2765	SCREW	WISTROM 6219	
	3	601.1624	LOCKNUT	MA2104B-1	
	2	601.2763	BOLT	AM3 MA	
	5	601.1497	WASHER	MA2104B-1	
	15	601.1541	LOCKNUT	MA2104B-1	
	3	601.2766	RIVET	MA2104B-1	
	30	601.2724	WASHER	MA2104B-1	
	1	646.3316	BLADE		▲
	1	646.3315	BLADE		▲
	1	646.3314	BLADE		▲
	1	646.3313	UPPER GUIDE		▲
	1	646.3312	CENTER PLATE		▲
	1	646.3311	PIN HALF		▲
	1	646.3310	IN HALF		▲
		646.3301	UPPER CUTTER ASSY		
LINE	FIND #	PART #	DESCRIPTION	MAFL	SPLC
QTY				PARTS LIST	
				APICAL INDUSTRIES	
				2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
				UPPER CUTTER ASSY	

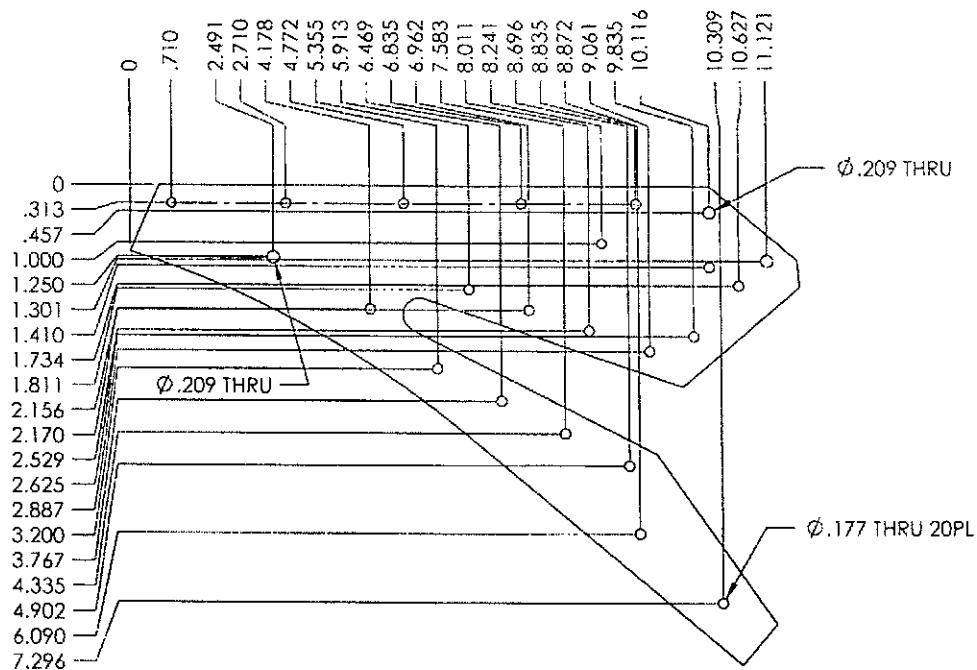


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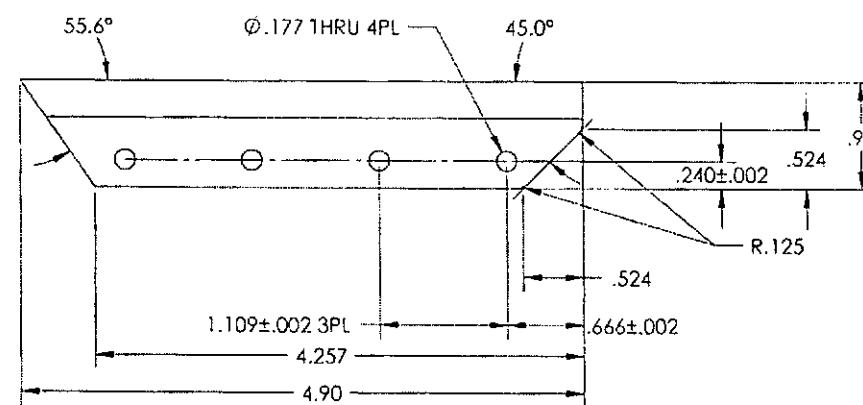
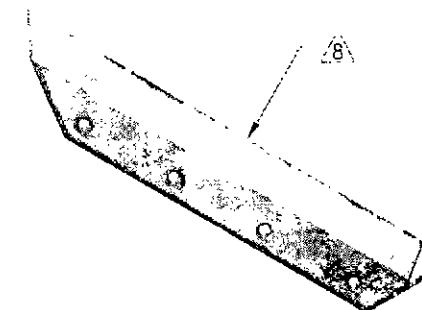
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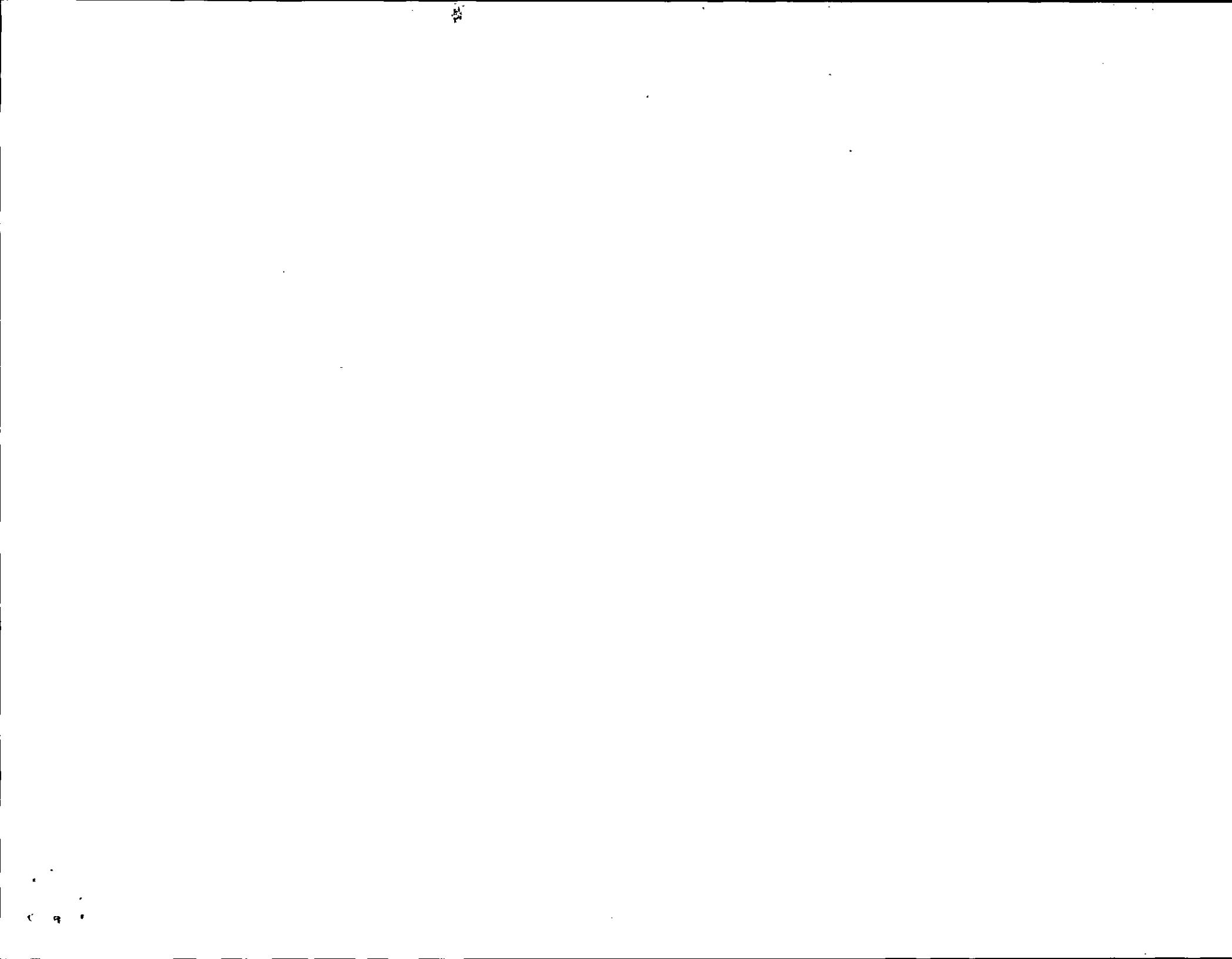
DATE	APICAL INDUSTRIES		
DESIGNER	2608 MAPLE HEIGHTS DR.		
1. H.P.	OCEANSIDE, CA 92056-3512 (760)724-5330		
DRAWING NUMBER			
COMPUTER NO.			
UNIVERSITY OF CALIFORNIA SAN DIEGO COLLEGE OF ENGINEERING DEPARTMENT OF MECHANICAL AND MATERIALS ENGINEERING STRUCTURAL DESIGN GROUP STUDENT DESIGN TEAM	UPPER CUTTER ASSY		
REV.	DATE	ENG'D BY	PAGE
	6/20/00	646.3300	1/1
	B. DAWA		
		SCALE: 1:1	SHEET: 1 OF 6



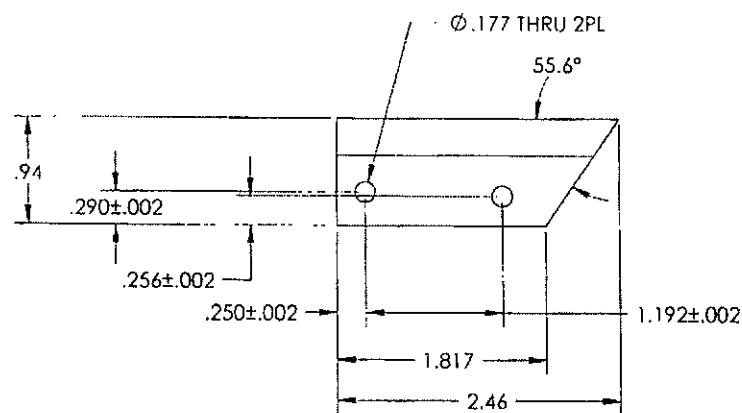
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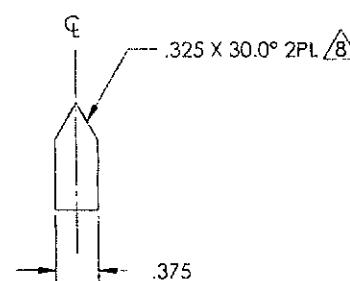
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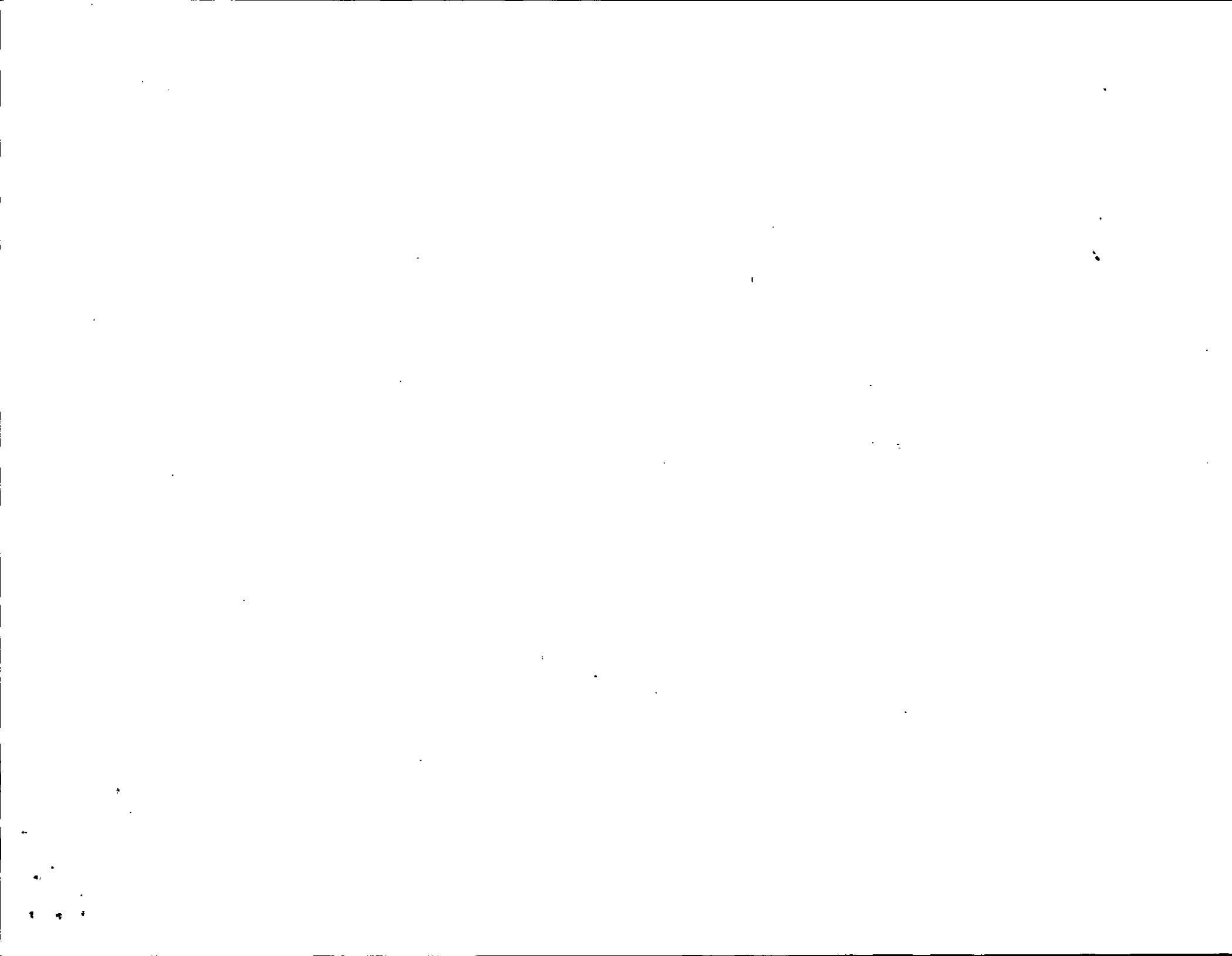
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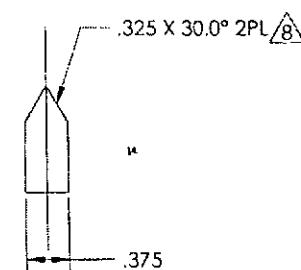
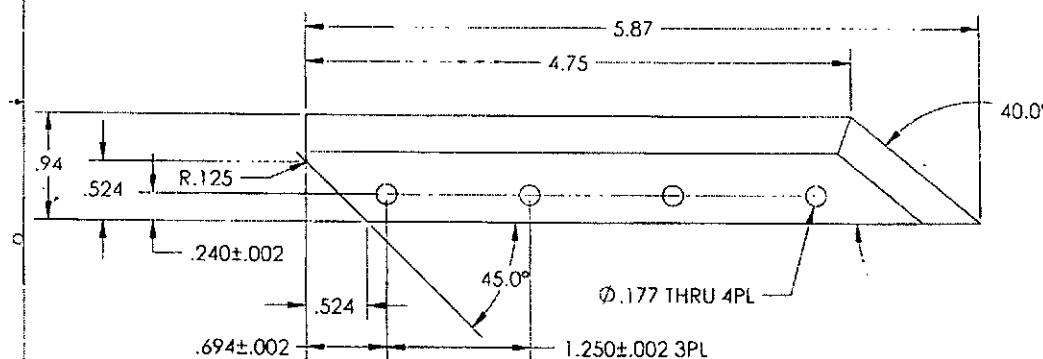
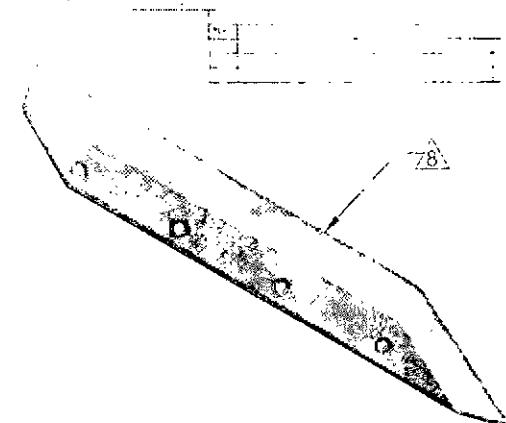
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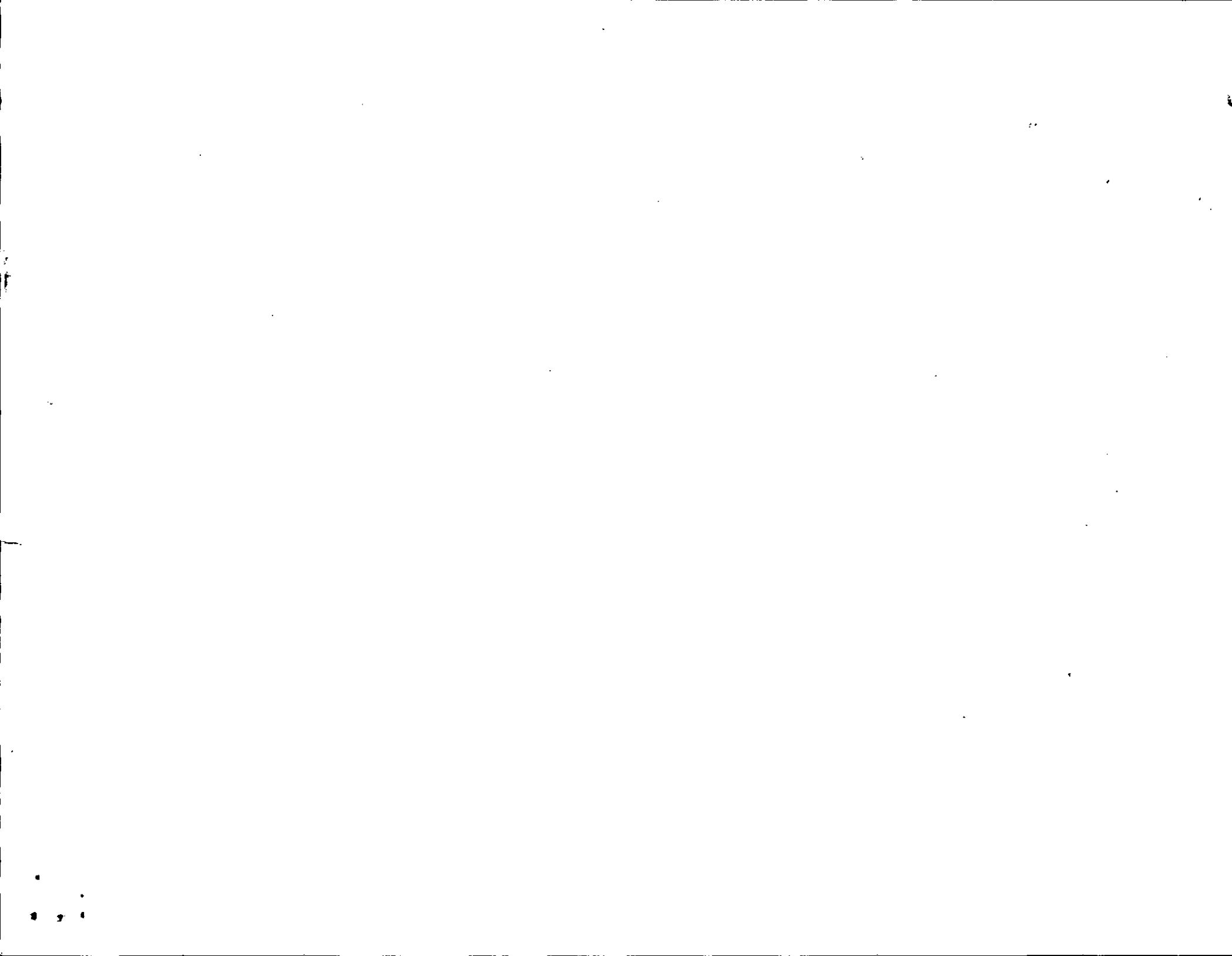
APICAL INDUSTRIES 2400 TEMPLE HILLS DR. OCEANSIDE, CA 92056-3512 (760)724-5300	APICAL INDUSTRIES
UPPER CUTTER ASSY	
UNITS OF ONE (1) EACH EQUIPMENT NOT INCLUDED SPACED DIMENSIONS IN INCHES (1/16")	DATE DRAWN 646.3300 S. STAVIS SCALE: NONE SHEET 7 OF 8



102893



646.3316



DART AEROSPACE LTD	Work Order:	102893
Description: Blade	Part Number:	C46-3316
Inspection Dwg:	Rev:	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Measured by:	MH / and
Date:	13/06/28

Audited by:	D.A	DAS
Date:	13/07/02	08 9-89

Preliminary Approval:	
Date:	

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

211

111

2 2 2 2 2 2

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL	EXPÉDITEUR	BON D'EXPÉDITION
Order	Shipper ID	Shipper
187758	1	73273

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

LIVRÉ À /Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT	BON DE LIVRAISON DU CLIENT	TYPE DE MATÉRIEL	DATE DE LA COMMANDE	TRANSPORTEUR
Customer PO	Customer Shipper No.	Material Type	Order Date	Carrier
PO20425		A2	2013/7/5	FEDEX

QUANTITÉ	No. PIÈCE / NOM DE LA PIÈCE	DESCRIPTION DE LA PIÈCE	POIDS
Quantity	Part No.	Part Name	Weight

66 646.9711 20,

(60) BLADE

REFERENCE: 102756

58-62 RC

MATERIAL: A2

(6) 646.3316 BLADE

REFERENCE 102893

58-62 RC

MATERIAL: A2

CONTENANT: 1 BOÎTE DE CARTON

CERTIFICAT

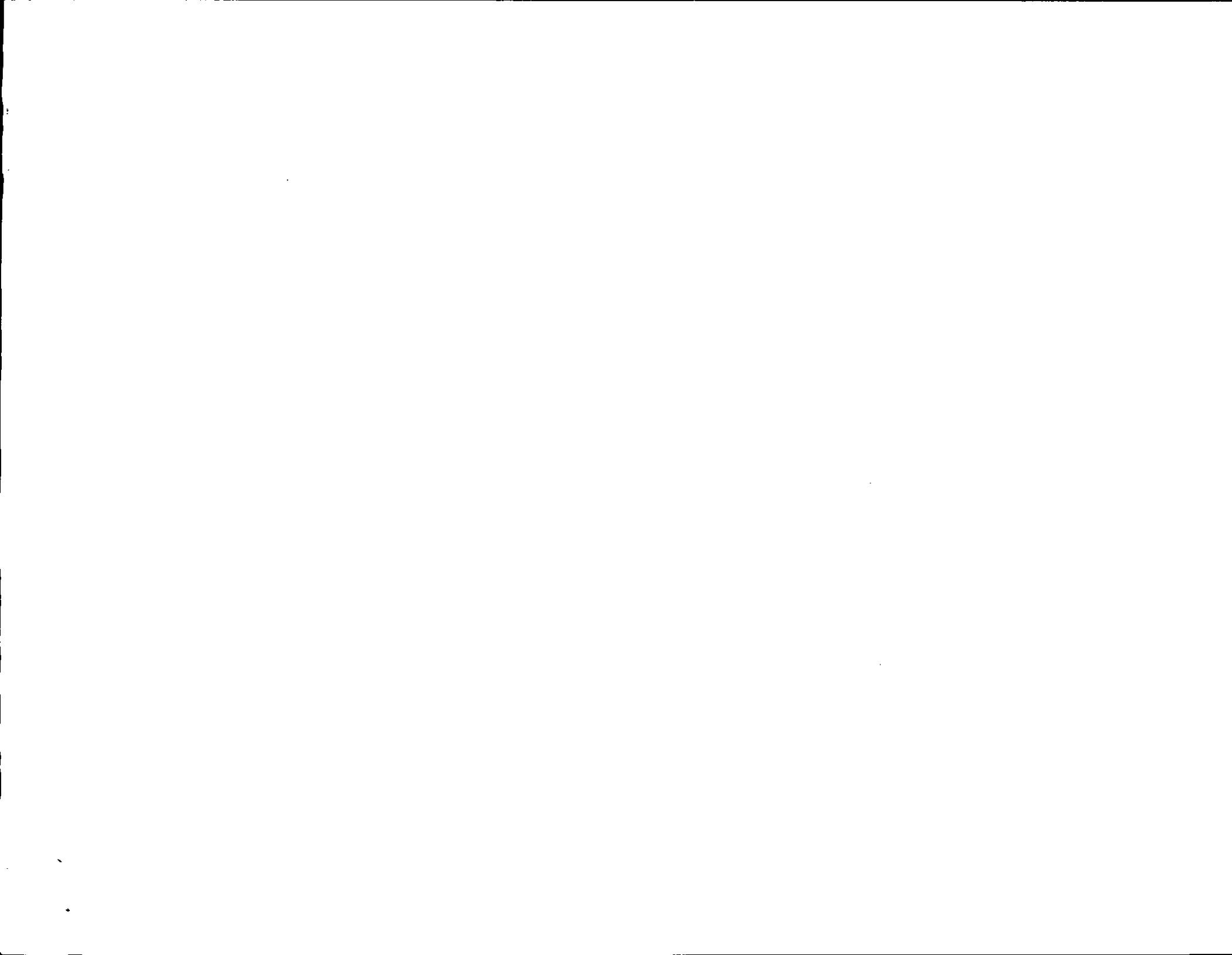
QUANTITÉ EXPÉDIÉE /Quantity Shipped: 66

POIDS EXPÉDIÉ / Weight Shipped : 20,00

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2013/07/18





560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8

Tél. 450 473-1884

Télécopieur/Fax administration 450 491-5498

Télécopieur/Fax production 450 491-6454

Rapport d'Inspection

Inspection Report

BON DE TRAVAIL order	CHARGEMENT load
187758	1

CLIENT / customer 215:DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO20425		A2		

SPECIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPECIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	5	58.0 - 60.0 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
68	20	<p>646.9711 (60) BLADE REFERENCE: 102758 58-62 RC MATERIAL: A2</p> <p>(6) 646.3316 BLADE REFERENCE 102893 58-62 RC MATERIAL: A2</p> <p>CONTENANT: 1 BOÎTE DE CARTON</p>

COMMENTAIRES / comments

CERTIFIÉ par / Certified by:



DATE: 2013-07-18

15 JUL 2013



METCOR INC.
560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Tel: 450-473-1884 / Fax: 450-491-5498

<u>Certificat de Conformité Détailé</u>	
Detailed Certificate of Compliance	
BON DE TRAVAIL order	CHARGEMENT load
187758	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no	MATÉRIEL material	CODE DE TRAITEMENT matl heat code	NUMÉRO DE LOT lot number
PO20425		A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	5 58.0 - 60.0 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
66	20	<p>646.9711</p> <p>(60) BLADE</p> <p>REFERENCE: 102756</p> <p>58-62 RC</p> <p>MATERIAL: A2</p> <p>(6) 646.3316 BLADE</p> <p>REFERENCE 102893</p> <p>58-62 RC</p> <p>MATERIAL: A2</p> <p>CONTENANT: 1 BOÎTE DE CARTON</p>

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
1.00 CONT. INIT.	LAVAGE		si nécessaire							
2.00 PREPARING	COMPTAGE									
3.00 PREHEAT 1	1200	0:30	VAC			390				
4.00 PREHEAT 2	1500	0:30	VAC			390				
5.00 VAC HARDE	1800	1 hrs	VAC		AZOTE	390				



METCOR INC.
560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détailé.

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
187758	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

1

Operation	Temp. spécifiée Specified Temp	Temps de temps Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
6.00 TEMPER	450	3 hrs	AIR			654				
7.00 TEMPER 2	450	3 hrs	AIR			654				
8.00 HARDN INS										
9.00 FINAL INSP							07-18-2013			07-18-2013

COMMENTAIRES / comments

Le traitement thermique a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de traitement thermique ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandées ont été faites et documentés. Aucun changement ou dérogation n'a été fait par rapport au traitement thermique demandé. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

All the heat treatment processing performed on this order was accomplished using heat treatment equipment compliant with the requested heat treatment specification.

All the heat treatment operations were accomplished in accordance with the requested/required heat treatment specification and all required verifications test have been performed and documented.

No unauthorized changes or deviations to required heat treatment specifications or procedures have been performed.

We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

APPROUVÉ par / Approved by:

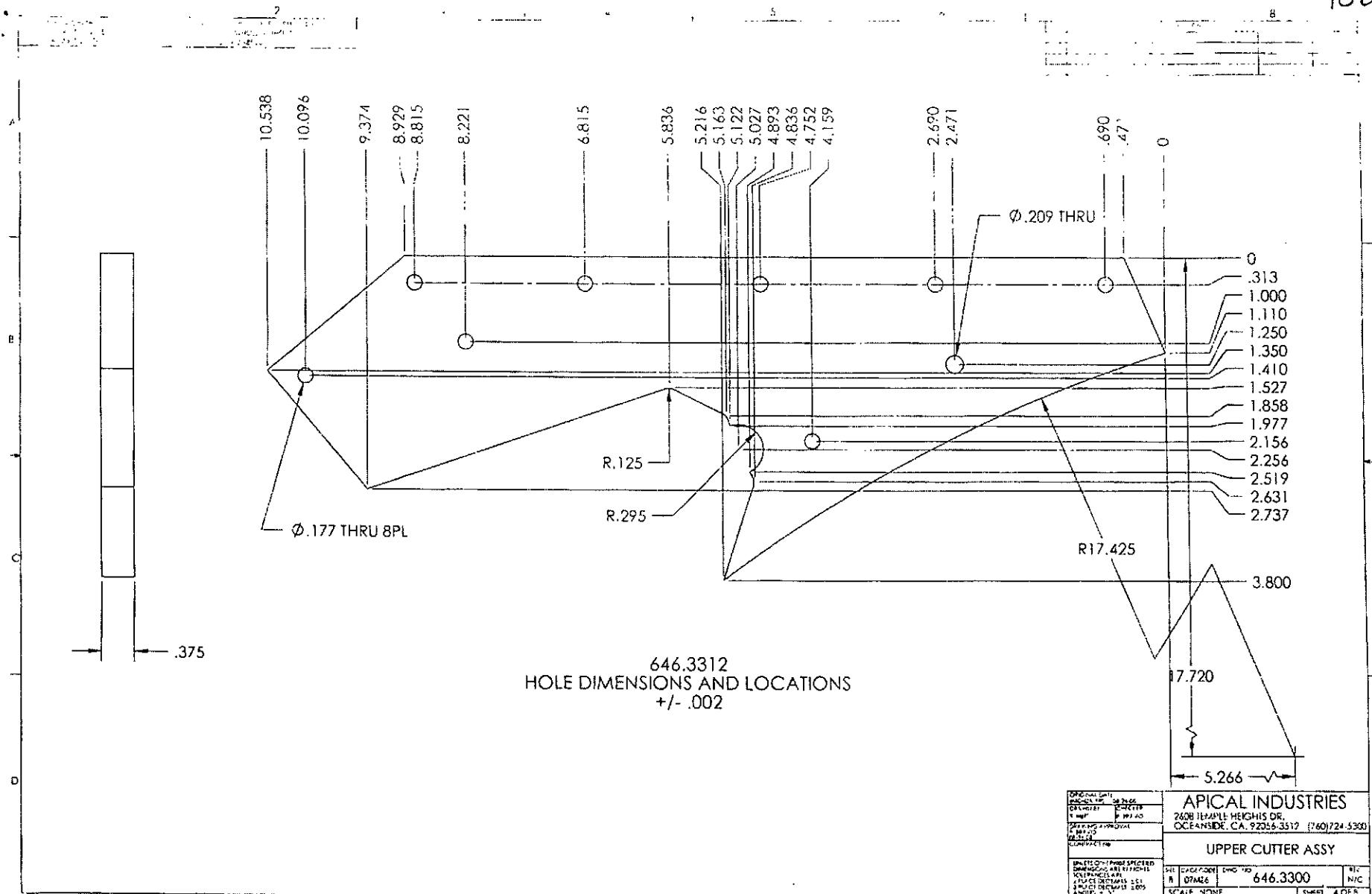
DATE: 2013-07-18

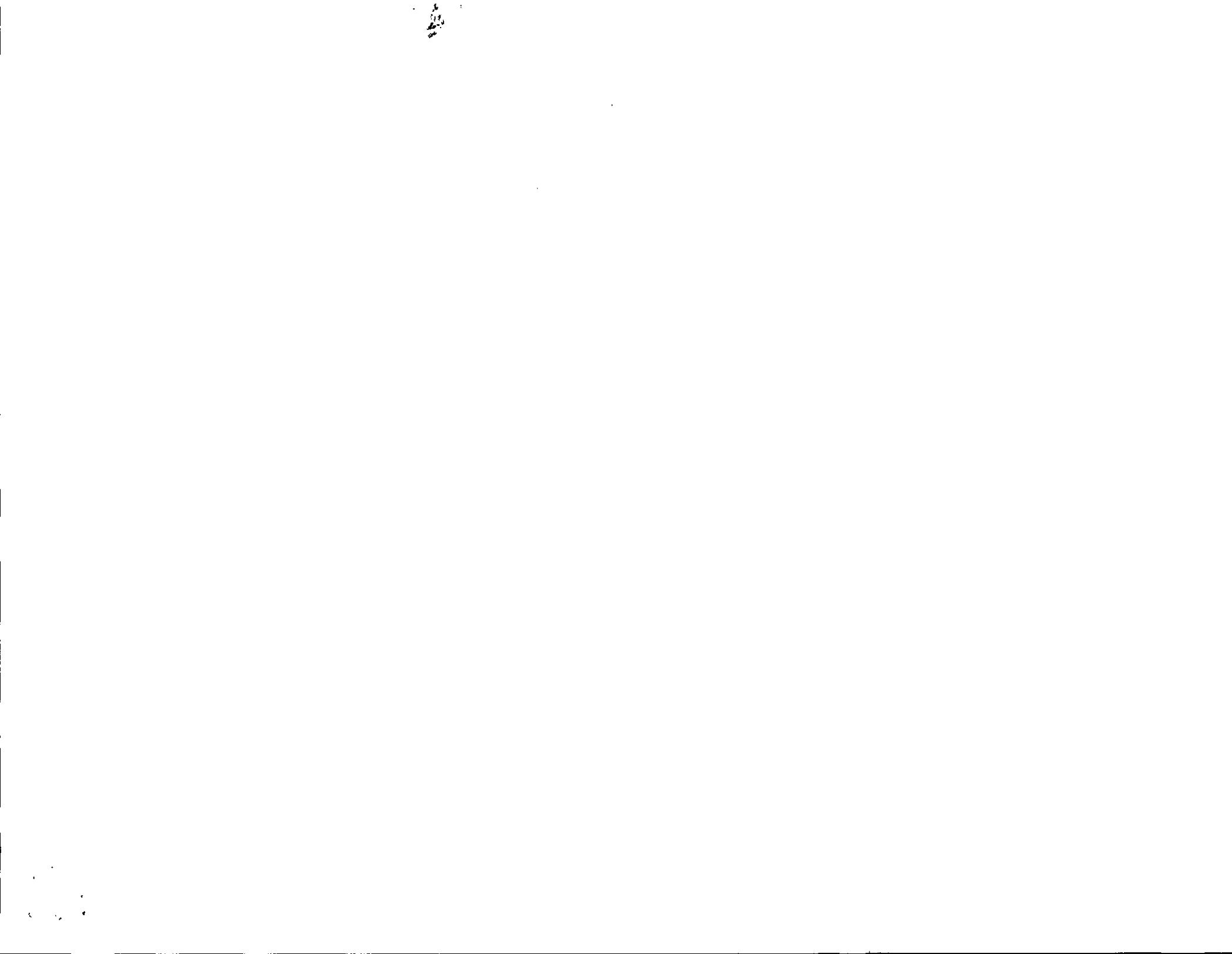
METCOR
12

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client./We certify that all the information on this report is exact and in accordance with the order requirements.

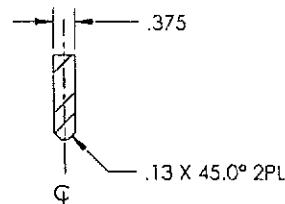
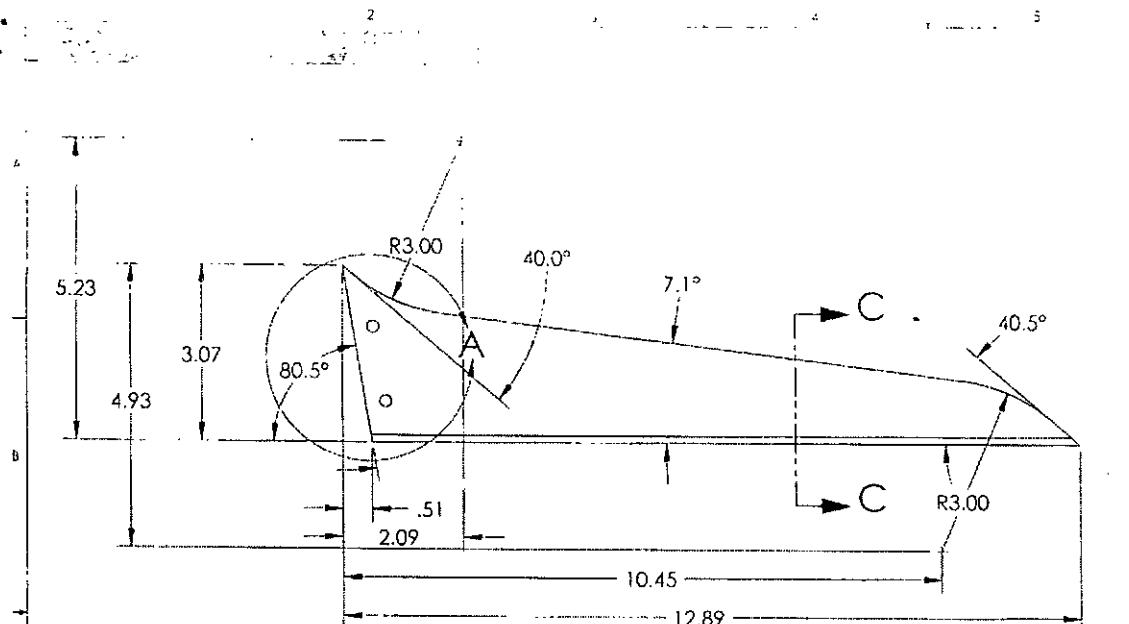
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102893

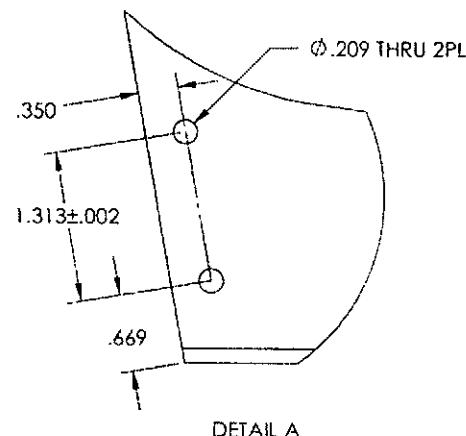




102893



SECTION C-C



646,3313

INQUIRIES/DATE	APICAL INDUSTRIES
INQUIRIES/TYPE	2400 TEMPLE HILLS DR.
INQUIRIES/PHONE	OCEANSIDE, CA. 92056-3512 (760)724-5300
COMPANY	
COMPONENTS	
UPPER CUTTER ASSY	
ITEM NUMBER	W1010A-C001 REV. B
DESCRIPTION	646.3300
QTY	1
SCALES	N/M
SCALE NAME	SHEAR S.D.P.

